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DEPARTMENT OF NATURAL RESOURCES

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Division of Oil, Gas and Mining

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Division Director

May 10, 2010

John Weisheit
Living Rivers
P. O. Box 466
Moab, Utah 84532

Subject: Response to Comment Letter, Earth Energy Resources, PR Springs Mine, M/047/0090, Uintah County, Utah

Dear Mr. Weisheit:

I am writing in response to your letter to Dana Dean received by electronic mail and dated April 26, 2010, about the tentative decision to approve the referenced mining operation. Each issue in your letter is referenced and highlighted below with the Division's response.

1. Page 2, second complete paragraph. DOGM failed to properly and legally notify Grand County.

DOGM notified Grand County by certified mail dated March 9, 2010. The notification was received by the County March 15, 2010.

2. Page 3, paragraph 2. Air and water quality permits focus on initial (North) pit.

The operator will submit a plan revision (advertised to the public) before commencing mining operations in the West pit. The cumulative impacts of the entire operation will be assessed in further detail at that time.

3. Page 3, paragraph 4. Data is lacking to support or refute the company's claims that they will not further impair the water quality of Willow Creek.

The Division of Water Quality determined the site would have a *de minimis* impact on ground water for reasons enumerated in their March 4, 2008, letter and further discussed in correspondence from JBR Environmental Consultants dated February 21, 2008. The operator has committed to zero discharge of surface water, so there should be no impact to surface waters.



The operator would be potentially subject to enforcement action if a discharge occurred. For these reasons, there should be little or no impact to Willow Creek.

4. Page 3, paragraph 5. Managing erosion is a serious challenge, and the operator has assured DOGM there will be no discharge.

As stated above, the operator commits to no discharge of surface water and would potentially be subject to enforcement action if this was to occur.

5. Page 4, first complete paragraph. Permit process cited by the EPA and the State is based on the criteria of an oil and gas drilling pad.

Your letter says the permit process cited by both EPA and the State is based on the criteria of an oil and gas drilling pad which is a considerably different kind of operation compared to the strip mining of tar sands; however, the March 10, 2010, letter from the EPA says, "NSPS Subpart Ja applies to certain affected facilities in petroleum refineries." The EPA letter goes on to explain why this regulation would not apply. The letter from the EPA says nothing about the applicability of this regulation to oil and gas drilling pads.

6. Page 6, Economic feasibility.

The Division does not consider the economic feasibility of an operation so long as the operator has submitted a complete plan, complies with appropriate rules, and provides a reclamation surety.

7. Page 6, Climate change.

This issue is not considered in the Utah Mined Land Reclamation Act or associated rules. Your letter says DOGM and SITLA should hold themselves to similar standards as the BLM. This issue would need to be addressed with the Utah State Legislature.

8. Page 7-8, Speculative water right, water not available for the mine, violation of treaties with tribes.

The issues raised in the letter are not within the Division's jurisdiction.

9. Page 8, Consultation with water agencies.

The Division has adequately considered impacts of the operation on surface and groundwater systems, and there should be minimal, if any, effects. Please see the comments under item 3 above.

10. Page 9, Water availability uncertain.

This issue is not within the Division's jurisdiction, but the plan (p. 38) says based on review of drill logs, a local aquifer is anticipated to yield a sufficient quantity of groundwater for project requirements.

11. Page 9, Water quality may be compromised.

Based on analyses of potential leachates, no "toxic liquids" would be generated that could pollute the aquifer. Summaries of the tests performed are included in the plan. The waste sand will not contain any added constituents not already present in the rock other than trace amounts of the reagent. Analysis of processed tailings indicates that leachate would have non-detectable levels of volatile and semi-volatile organic compounds. Metals tested in the Toxicity Characteristic Leaching Procedure would not be leached at detectable levels except barium which was detected at levels below the Utah ground water quality standard. Based on this information, there is no indication water quality would be compromised.

The letter says there is no data on recharge rates or direction of water movements, but this information is not required unless the Division sees a need. Considering the lack of potential impact, this data is not required.

As discussed under item 3 above, the operator has committed to not discharge surface water, so there should be no contributions of total dissolved solids (TDS) to surface water systems. There is very little likelihood of any impacts to TDS levels in groundwater. Water will be diverted away from the pits during operations, and after the site is reclaimed and revegetated, evapotranspiration will remove most water before it reaches the underlying tailings. The regional water table is about 2000 feet below the mine with various intervening layers of siltstone, shale, sandstone, mudstone, and marl making it very unlikely water percolating through the tailings could increase TDS levels in the ground water.

Processed sand will be placed in the pits such that runoff from the sand will be contained within the pits. As discussed above, the mine is designed such that all surface runoff will be contained within the mine site, so there should be no impacts to surface water quality.

12. Page 9, Air quality.

Your letter says DOGM should deny mining operations because the operator did not disclose the full emissions from all aspects of mining and processing, but the applicable rule, R647-4-109, only requires a *general* (emphasis added) narrative description of projected impacts on air quality and the measures that would be used to mitigate those impacts. The plan contains a general discussion of impacts from fugitive dust and emissions from the equipment used to mine, haul, and process the ore.

The primary regulatory authorities with regard to air quality issues are the Division of Air Quality and the EPA, and the Division understands these agencies have determined no additional permitting is required. Whether or not this is correct, the Division's approval of the notice of intention does not relieve the operator from compliance with other applicable rules, statutes, or ordinances.

13. Page 11, Drainage design inadequate.

The 10-year, 24-hour storm event is used to design the sediment pond associated with the plant site. The 10-year, 6-hour storm event was used to design the ditches. This storm event will produce a greater peak flow than a 10-year, 24-hour storm. Therefore, it is considered a more conservative storm water event to use to design ditches, and it is an industry standard. This is not considered unacceptable or risky in an area where maintenance occurs on a regular basis and a storm water maintenance plan has been developed. The runoff from the waste rock sites is controlled by the coarse rocky nature of the outcrops and the armoring of the drainage between the edge of the dump and the natural slope. Runoff from the outcrops of the dump faces will not be significant due to the lack of significant drainage area and the use of the erosion controls that will minimize erosion and decrease sedimentation. Given the geomorphology of the area, significant runoff over the last 1000 years has not been apparent in the drainage immediately below the waste rock piles. The Division does not have any specific regulatory storm event criteria and therefore requests designed facilities which will be stable and minimize erosion to the extent practical.

14. Page 11, Topsoil replacement.

Topsoil salvage, including locations from which the soil will be salvaged, is discussed on pages 26 and 27 of the plan. Soil will be salvaged from the mine site, not borrow areas, and it will be stored in the areas shown on Figure 2. Soil will not be borrowed from other areas.

The erosion rate is likely to increase between the time soils are replaced and when vegetation becomes established, but the amount of erosion is minimized by leaving the surface very rough, a practice with which the Division has had very good success. Roughness also improves vegetation establishment which further decreases erosion.

15. Page 11, Storage areas inadequate.

The letter says there is no discussion about how the layering process proposed by the operator will be accomplished. The materials are derived from two different sources. The fine grained material—the material remaining after hydrocarbons are extracted—will be encapsulated in a coarse material berm (batters). According to the plan, the coarse material grain berm will be dumped in place as run of mine over/interburden material and will be hauled from the pit. The sand tailings will be hauled from the process area and dumped in layers.

The Division agrees the slopes are steep, but the operation plan minimizes the probability of slope failure. Dump failures are circular and related to excess pore pressure. The horizontal layers shown in Figure 2a will increase the stability factor of safety for the dump areas, as it will act as a horizontal reinforcement perpendicular to the failure plane suggested in your letter. The French drain at the base of the dump will drain water filtered through the dump, decrease pore pressure buildup, and increase the factor of safety.

16. Page 11, Reclamation of approximate original contours inadequate.

The R647 rules do not contain the phrase "approximate original contour." This section of the letter appears to be a reference to the R645 rules which are not applicable.

The final paragraph on this page says the NOI does not mention that the material reclaimed in the mines will be compacted, but page 19 of the plan says clean sand will be replaced in the pit in a sequential layered and compacted manner to eliminate slope stability concerns (as discussed above).

17. Page 12, Endangered species.

The premise of the first paragraph in this section is that the drainage control section of the plan is inadequate, and for reasons discussed above, the Division disagrees that the drainage control section is inadequate and that the mine thus constitutes a threat to the critical habitat of the Green River.

As required, the plan contains a discussion about the potential impacts to threatened and endangered species. The area contains potential foraging habitat for Mexican spotted owls, but the impact from the mine would be minimal, partly because it is only foraging and not nesting habitat and partly because there are existing disturbances in the area, such as the Seep Ridge Road and oil and gas development. The Division is not currently evaluating a larger disturbance than that shown in the plan, and the disturbance in the current plan is likely to be reclaimed before the mine is expanded.

According to Brian Maxfield of the Utah Division of Wildlife Resources, the sage grouse lek was not active in 2008 or 2009. The plan contains the following commitment on a confidential page:

If it [the lek] was active in 2008, during Spring 2009, Earth Energy will commit to observe the Monument Lek three times during early morning hours between March 15 and April 15 to see if it is again active. During that time interval, they will cease mining between ½ hour before to 1 hour after sunrise, and 1 hour before to 1 hour after sunset. If no grouse are using the lek after three observations, mining can continue during those hours. If grouse are found to be using the lek, the twice-a-day

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mining cessation will continue until May 15th. This will be repeated on an annual basis as long as the lek remains active.

Delays in obtaining funding for the mine have, appropriately, delayed implementation of this plan, but this degree of monitoring and avoidance should be adequate if the grouse are present. The commitment in the plan is beyond the regulatory requirement because sage grouse is not listed as a threatened or endangered species.

You requested a hearing before the Division to address the issues in your letter. If after reviewing these responses you still desire to hold a hearing, please contact Vickie Southwick at 801-538-5304. If you have questions about this letter or need to contact me for other reasons, I can be reached by telephone at 801-538-5261 or by electronic mail at paulbaker@utah.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'PBB' followed by a stylized flourish.

Paul B. Baker
Minerals Program Manager

PBB:vs

cc: wstokes@utah.gov
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Steve Alder
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